



## 10-Gbps duobinary-4-PAM for High-Performance Access Network

Suhr, Lau Frejstrup; Vegas Olmos, Juan José; Tafur Monroy, Idelfonso

*Publication date:*  
2015

*Document Version*  
Publisher's PDF, also known as Version of record

[Link back to DTU Orbit](#)

*Citation (APA):*  
Suhr, L. F., Vegas Olmos, J. J., & Tafur Monroy, I. (2015). *10-Gbps duobinary-4-PAM for High-Performance Access Network*. Poster session presented at DTU Fotonik Seminar 2015, Lyngby, Denmark.

---

### General rights

Copyright and moral rights for the publications made accessible in the public portal are retained by the authors and/or other copyright owners and it is a condition of accessing publications that users recognise and abide by the legal requirements associated with these rights.

- Users may download and print one copy of any publication from the public portal for the purpose of private study or research.
- You may not further distribute the material or use it for any profit-making activity or commercial gain
- You may freely distribute the URL identifying the publication in the public portal

If you believe that this document breaches copyright please contact us providing details, and we will remove access to the work immediately and investigate your claim.



# 10-Gbps duobinary-4-PAM for High-Performance Access Networks

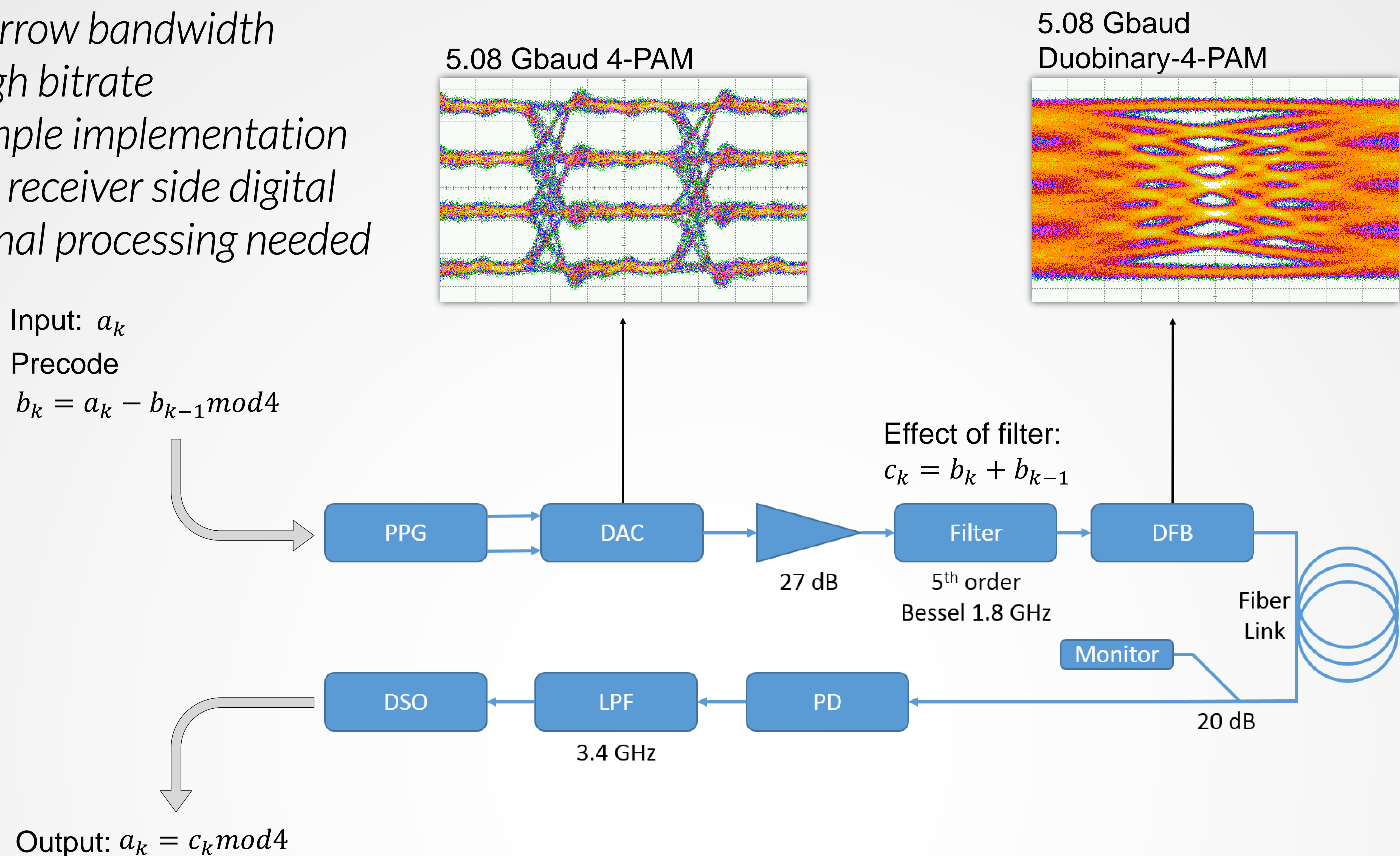
L. F. Suhr\*, J.J. Vegas Olmos, and I. Tafur Monroy

Metro Access & Short-Range Communications, Department of Photonics Engineering, Technical University of Denmark  
Ørsted Plads, Building 358-Room 109, Lyngby, 2800, Denmark

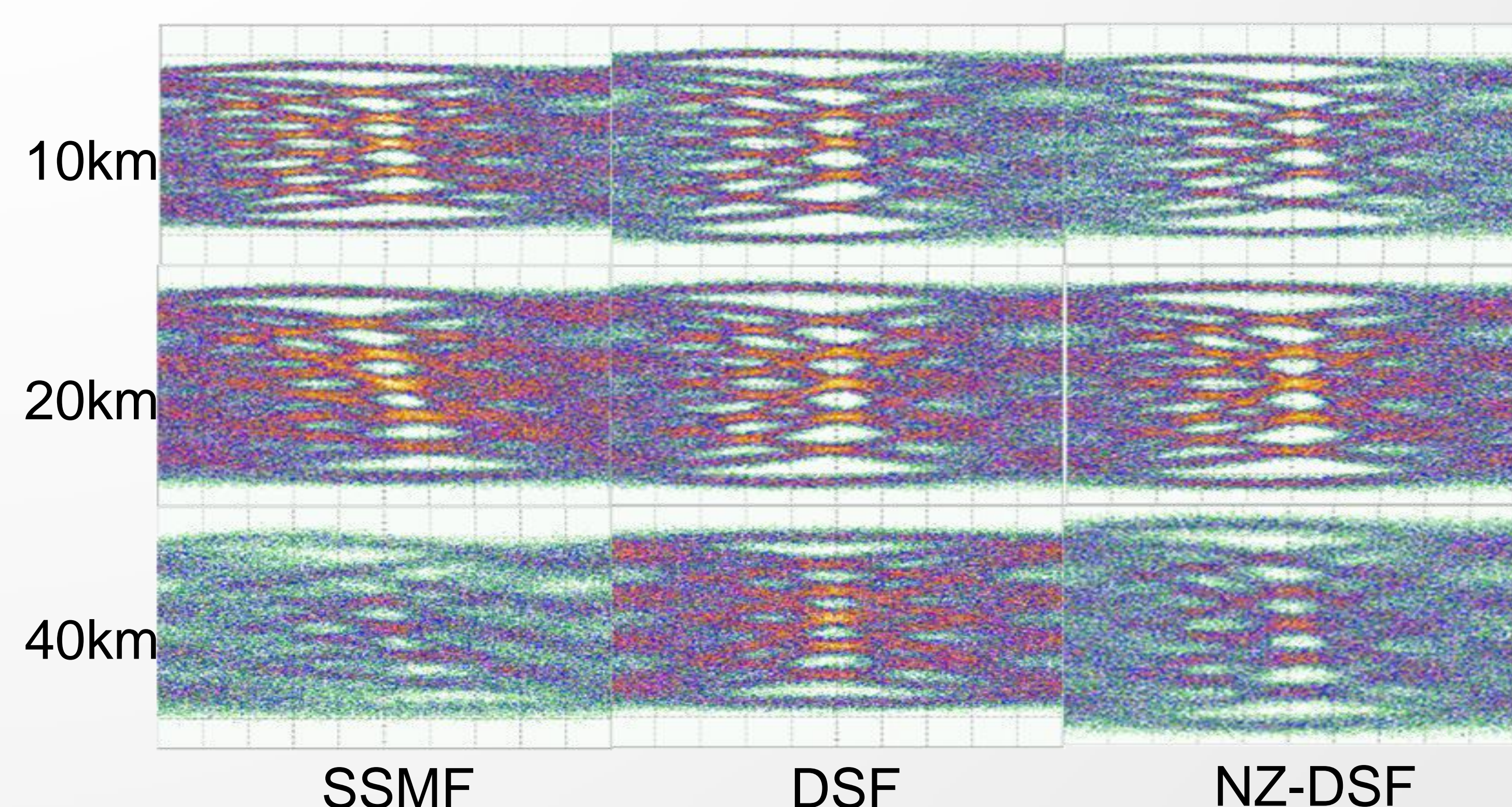
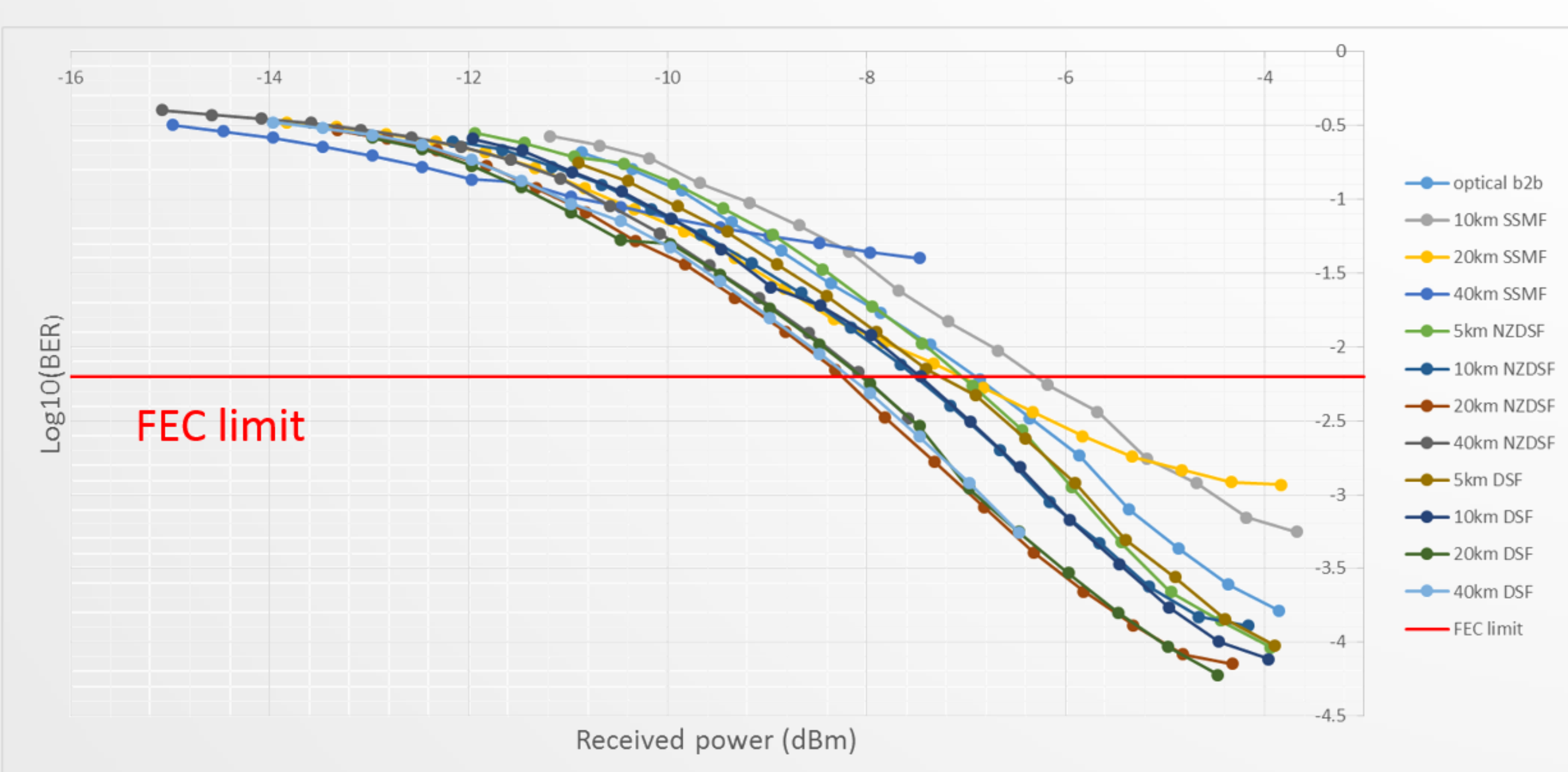
\*s103213@student.dtu.dk

## Duobinary-4-PAM:

- Narrow bandwidth
- High bitrate
- Simple implementation
- No receiver side digital signal processing needed



## Results



### Advantages

- Very simple transmitter and receiver
- Half the spectrum of 4-PAM
- Robust transmission performance

### Drawbacks

- Receiver sensitivity penalty
- Short sampling window
- Dispersion sensitive

## Conclusion:

Duobinary-4-PAM allows transmission of 10Gbps signals over 2.5GHz equipment.

Useful for limited bandwidth applications, e.g. Radio-over-fiber